

Professor Dr. Shafiq Ahmad

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Dr. Shafiq Ahmad received his Ph.D. degree from RMIT University, Melbourne, Australia, Master degree from Asian Institute of Technology, Bangkok, Thailand & Technical University Hamburg, Germany, Bachelor degree in Mechanical engineering from UET Lahore, Pakistan. Dr. Ahmad has over thirty years proven track record work experience both in industry and academia. He has research experience in R & D Centre and process automation with Deutsche Aerospace AG (DASA) Hamburg, Germany and Seagate Technology Bangkok, Thailand. He obtained several distinguished performance awards. Dr. Ahmad is also a certified professional and consultant in deploying Six Sigma (DMAIC) business improvement model. Before joining King Saud University (KSU), Dr. Ahmad was faculty at Al-Yamamah University and he has achieved “Best performance Award”. Currently, Dr. Ahmad is Professor at IE dept. College of Engineering KSU Riyadh, Saudi Arabia. Dr. Ahmad has an excellent research profile and obtained *Excellent Researcher Award in Scientific Research* from College of Engineering at KSU in 2019. He has published a research book, a book chapter and more than 150 refereed scientific research articles and was ranked among 2 % of top-cited scientists in 2022. Dr. Ahmad research profile links:

Web of Science: <https://www.webofscience.com/wos/author/record/829340>

Google Scholar: <https://scholar.google.com/citations?hl=en&user=A4rfwboAAAAJ>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57209916514>

ORCID ID: <https://orcid.org/0000-0003-0712-9133>

ACADEMIC QUALIFICATIONS

Doctor of Philosophy (Ph.D.)

Mar 2006 - Dec. 2009

Operations Research & Statistics Dept., School of Mathematical and Geospatial Sciences RMIT University, Melbourne, AUSTRALIA

Thesis title: Process capability assessment for univariate and multivariate non-normal correlated quality characteristics

Master of Engineering

May 1999 - April 2000

Asian Institute of Technology, Bangkok, Thailand & Technical University Hamburg, Germany

Thesis title: Analysis, optimization and validation of a simulation model for Airbus A340 aircraft PACK air-conditioning system

Bachelor of Mechanical Engineering

Feb 1987 - May 1992

UET, Lahore, Pakistan

PROFESSIONAL CERTIFICATIONS

Design for Six Sigma (IDOV) Certificate
2001

conferred on 31st May

Seagate Technology Six Sigma Asia Operations, Singapore.

Six Sigma Operational (DMAIC) Certificate
2003

conferred on 19th Sep.

Seagate Technology Six Sigma Asia Operations, Bangkok, Thailand

Certificate of Merit (Design of Experiment)

conferred on 4th Jul. 2003

Seagate Technology Six Sigma Asia Operations, Bangkok, Thailand

Student-Centred Discussions
2009

conferred on 30th Jun.

Online Learning facilitator course, Open Universities, Australia

HONORS & AWARDS

- October 2023, “2 % of top-cited scientists in 2022” ([october 2023 data-update for "updated science-wide author databases of standardized citation indicators" - elsevier bv \(digitalcommonsdata.com\)](#))
- April 2019, “*Excellent Researcher Award*” for excellence in scientific research; College of Engineering, King Saud University, Riyadh, Saudi Arabia.
- May 2019, “*Distinguished Senior Graduation Project Supervisor Award*”, BAE Systems, College of Engineering, King Saud University, Riyadh, Saudi Arabia.
- January 2016, “*Best Performance Award*”; Al Yamamah University, Riyadh, Saudi Arabia
- December 2005, the prestigious “*Australian Post Graduate Award (APA)*” to pursue Ph.D. at RMIT University, Melbourne, Australia.
- February 1998, “*Siemens AG Germany Scholarship Award*” to pursue a Master's Degree in Engineering under an exchange program between AIT, Bangkok and TUHH, Hamburg, Germany.
- February 2004, “*Asian GM Award*”, Seagate's most prestigious company-wide recognition award, Seagate Technology Thailand.
- July 2004, “*Best DOE team Ronald Fisher Award*”, Seagate Technology Thailand.

- April 2004, “*Leader Most Valuable Performance Award*”, Seagate Technology Thailand.
- August 2005, “*Long Service Award*”, for a long service recognition, Seagate Technology Thailand.

ACADEMIC / TEACHING EXPERIENCE

| | |
|---------------------------|---|
| Institution: | Industrial Engineering Department , College of Engineering, King Saud University, Riyadh, Saudi Arabia |
| Position title: | Assistant Professor |
| <i>Jan 2016- Mar 2019</i> | |
| Position title: | Associate Professor |
| <i>Mar 2019- May 2023</i> | |
| Position title: | Professor |
| <i>May 2023- present</i> | |

Academic and Administrative Duties

- Deliver lectures to undergraduate and postgraduate level courses offer by the Industrial Engineering Department (IED).
- Undertake academic duties (i.e. setting examination questions, marking, invigilation, and pastoral support of students) required to sustain the delivery of high-quality teaching.
- Serve as member of IE Department Board; serve as representative for accreditation of IE degree study program.
- Coordinate and serve for departmental activities in preparing documents for the national accreditation (NCAAA) and ABET accreditation

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|---------------------------------|---|
| Institution: | Department of Management, College of Business Administration Al Yamamah University, Riyadh, Saudi Arabia |
| Position title: | Assistant Professor Quality Management |
| <i>September 2011- Jan 2016</i> | |
| <i>July 2012 – April 2015</i> | Chair Management Department |

I have performed academic administration, prepared course materials and curriculum for undergraduate student's levels in the areas of quality management, operations management, and quantitative methods in management, business statistics and supply chain management, besides teaching such courses. For graduate level, I have prepared curriculum in the area of supply chain management, Human Resource Management, Operational Issues in Human Resource Management, Human Resource Productivity and Quantitative Business Analysis, and delivered such courses for different post-graduate programmes.

Academic and Administrative Duties

- Deliver lectures to undergraduate and postgraduate level courses.
- Performed academic duties (i.e. setting examination questions, marking, invigilation, and pastoral support of students) required to sustain the delivery of high-quality teaching.
- Schedule classes and assign courses to faculty members to be taught in each semester.
- Update department curriculum, courses & programs to match with business needs of the industry.
- Serve as a peer mentor for classroom observations and provide feedback to faculty members.
- Foster the development of each faculty member's special talents & interests; foster good teaching in the department; stimulate faculty research & publications; encourage faculty members to participate in refereed conferences and workshops.
- Review final grades submitted by faculty members by the end of each semester and report to the dean for final approval.
- Maintain a collegial atmosphere among faculty; establish department committees; develop and implement short and long-term departmental programs and plans contributory to and consistent with the COBA vision and mission.
- Serve as a member of the College Board; serve as a representative of the college to the university & community; implement the college & university's strategic goals; coordinate department & college curriculum, development, and accreditation of BBA study program.
- Supervise activities concerning faculty affairs; help in recruiting faculty members according to department needs; assign faculty responsibilities such as teaching, research & committees; evaluate faculty performance continually; report on the faculty evaluations; conduct a planning & review session at the beginning and end of each academic year.

- Communicate department needs to the dean, and interact with upper-level management; coordinate activities with other YU groups; process department correspondence & requests for information.
- Supervise secretarial staff in the department; maintain essential department and student records.
- Coordinate and lead departmental activities in preparing documents for the national accreditation (NCAAA).
- Ensure quality education for students by encouraging the development of courses that maximize student competencies in the areas determined by the course curriculum.
- Supervise activities concerning student counseling; assign faculty for student advising; oversee and actively participate in the resolution of academic & non-academic issues.
- Acting as liaison between faculty members and university senior management.

Courses being taught at IE Department, KSU Jan 2016- Present

Undergraduate level

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|---|---|
| ▪ IE339 Quality Engineering | ▪ IE 530 Quality Engineering |
| ▪ IE333 Design of Experiment | ▪ IE 520 Design and Experimental Analysis |
| ▪ IE 484 Advanced Quality Engineering | ▪ IE 600 Master thesis supervision |
| ▪ IE 496/497: Graduation project (Supervision of 3 projects/semester with 6-8 students) | ▪ IE 700 PhD. Thesis supervision |
| | ▪ IE 611 Advance topics in Statistics |
| | ▪ IE 615 Advance topics in Quality Engg. |

Graduate level

Master Thesis Supervision:

- Thesis title: "Performance Evaluation and Decision Making Of Queuing Models Involving Expert Judgment And Attitude Of Decision Maker" by Latifah Fahad Abdulrahman ALQasem for the Master Degree of Science in Statistics, Department of Statistics and Operations Research, College of Science, King Saud University, 2018
- Thesis title: "Applying of Process Capability Indices for Non-Normal Data for Multivariate Quality Characteristics" by Moath Mohsin Alatefi for the Master Degree of Science in Engineering, Department of Industrial Engineering, College of Engineering, King Saud University, 2019
- Thesis title: Development of Machine Learning Model for Multivariate Fault Detection by Muhammad Dzulkarnain Al Firdausi for the Master Degree of Science in Engineering, Department of Industrial Engineering, College of Engineering, King Saud University (under progress)
- Thesis title: The impact of big data prescription analysis in operational performance evaluations" by Saad Abdullah Aladyan for the Master Degree of Science in Engineering, Department of Industrial Engineering, College of Engineering, King Saud University (under progress)
- Thesis title: "Scheduling the two-stage hybrid flow shop scheduling problem with release date and transportation time" by Ahmed Hassan Mohammed Humedi for the Master Degree of Science in Engineering, Department of Industrial Engineering, College of Engineering, King Saud University (under progress)

PhD Thesis Co-supervision:

Thesis title: "Integrated Lean Resilient Digitize Supply (LGRDS) for Humanitarian aids/reliefs in MENA" by Illias Musliyar for the Ph.D. degree of Science in Engineering, Department of Industrial Engineering, College of Engineering, King Saud University (under progress)

PhD Thesis Examination

Doctoral thesis title: Temperature influence on coefficient of friction in composite manufacture

Institution: Department of Mechanical Engineering, School of Engineering, University of Melbourne, Australia.

Courses taught at Al Yamamah University

September 2011- Jan 2016

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|-----------------------------------|--|
| ▪ MGT301: Operations Management | ▪ STT102: Business Statistics I |
| ▪ MGT305: Quality Management | ▪ QMGT403: Total Quality Management |
| ▪ MGT102: Organizational Behavior | ▪ MGT 515: Supply Chain Management |
| ▪ MGT201: Organization Theory | ▪ STT202: Business Statistics II (Intermediate Statistics) |
| ▪ QMGT301: Quality Assurance | |
| ▪ QMGT404: Design of Experiment | |

Courses taught at Business Colleges in RMIT University, Latrobe University and CQU University Melbourne Campus, Melbourne, Australia

July 2006 to June 2010

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| ▪ PROC2081: Data Collection and Analysis | ▪ MGMT 19105: Quality Management |
| ▪ ECO11QA: Quantitative Analysis in Economics | ▪ MGMT 19106: Supply Chain Management |
| ▪ QNPS2296: Physical and Quantitative Analysis | ▪ MGMT 19103: Logistics Management |
| ▪ OMGT 1082: Introduction to Logistics and SCM | |

- LGM100: Introduction to Logistics and SCM (online delivery mode)
- OMGT1070: Procurement Management
- BUSM1482: International Trade Operations
- MATH2123: Mathematics and Statistics
- QNPS2338: Basic Statistics for Engineers
- MKTG 5666: Managing Quality and Continuous Improvement
- MIET 7266: Quality Improvements at Workplace.
- BUSM 5720C: Engineering Mathematics

RESEARCH PROFILE

1. **Institution:** College of Science, Engineering and Health, RMIT University, Melbourne, Australia
 Position title: Visiting Research Fellow *Mar 2010 – Oct 2016*
 Job Description: Worked with RMIT Operations Research and Statistics group with key focus on performance analysis of different business processes in different research areas such as clinical area and finance and banking processes.
2. **Institution:** School of Economics & Finance, La Trobe University, Melbourne
 Position title: Research Associate *July 2011- Dec 2011*
 Job Description: Performance evaluations of Islamic finance and banking system and performance comparison of Islamic finance with conventional finance and banking system. This work was related to Islamic Finance & ARC Discovery project. Optimization of Islamic portfolio management system using metaheuristic approaches and application of intelligent computational techniques for forecasting and predictions of Islamic finance growth in future.
3. **Institution:** School of Mathematics and Geospatial Sciences, Operations Research and Statistics Discipline RMIT University, Melbourne
 Position title: Research Assistant *Mar 2007 –Dec. 2008*
 Job Description: Worked on various research projects with Operations Research and Statistics research group to conduct statistical analysis for categorical and numerical datasets. One of them was to conduct analysis of student's feedback surveys for service subjects. This project was funded by the Australian Teaching and Learning Council (ATLC). The project involved working on a large dataset of student's feedback for 2 years teaching (2007 and 2008) period. The results of this model have been provided to the concerned authority for planning and improvement purposes.
4. **Institution:** School of Business Information Technology (BIT) and Logistics, RMIT University, Melbourne
 Position title: Research Assistant *Nov 2009 – Feb. 2010*
 Job Description: I worked on various research and data analysis projects with Logistics group to develop statistical and methodological analyses on large datasets. One of these research projects was funded by the Australian Research Council (ARC) and my role was to develop a fire forecast model at an aggregate level. The project involves working on a large dataset of residential fire incidents for Queensland State datasets for 10 years. The results of this model have been provided to the concerned authority for planning purposes

RESEARCH PUBLICATIONS

BOOK:

Research Book (2012) "Multivariate Process Capability Assessment for Non-normal Quality Data" with ISBN 978-3-659-18888-6, published by LAP LAMBERT Academic Publishing GmbH & Co. KG Heinrich-Böcking-Str. 6-8 66121, Saarbrücken, Germany (<https://www.amazon.com/Multivariate-Process-Capability-Assessment-Non-normal/dp/3659188883>).

BOOK CHAPTER:

Book chapter (2020) entitled "Machine health monitoring and fault diagnosis techniques review in industrial power-line network" published in book entitled "**Modeling and Simulation in Engineering - Selected Problems**" ISBN: 978-1-83968-250-6 (<http://www.intechopen.com/books/modeling-and-simulation-in-engineering-selected-problems>)

EDITORIAL article:

Editorial (2023) entitled "Energy materials based novel solar thermal applications" Front. Energy Res., 20 June 20 23, Sec. Solar Energy, Volume 11 – 2023, <https://doi.org/10.3389/fenrg.2023.1230967>

JOURNAL ARTICLES:

1. Arooj, S., Altaf, S., Ahmad, S., Mahmoud, H., & Mohamed, A. S. N. (2024). Enhancing sign language recognition using CNN and SIFT: A case study on Pakistan sign language. *Journal of King Saud University-Computer and Information Sciences*, 101934. <https://doi.org/10.1016/j.jksuci.2024.101934>
2. Hussain, M. T., Hussain, M. R., Tariq, M., Sarwar, A., Ahmad, S., Poshtan, M., & Mahmoud, H. A. (2024). Archimedes Optimization Algorithm Based Parameter Extraction of Photovoltaic Models on a Decent Basis for Novel Accurate RMSE Calculation. *Frontiers in Energy Research*, 11, 1326313. <https://doi.org/10.3389/fenrg.2023.1326313>
3. Hussain, M. T., Tariq, M., Sarwar, A., Ahmad, S., Poshtan, M., & Mahmoud, H. A. (2024). A dual source fed eleven level switched capacitor multilevel inverter with voltage boosting capability. *Frontiers in Energy Research*, 11, 1326554. <https://doi.org/10.3389/fenrg.2023.1326554>
4. Sajid, I., Sarwar, A., Tariq, M., Bakhsh, F. I., Ahmad, S., & Mohamed, A. S. N. (2023). Archimedes optimization algorithm (AOA)-Based global maximum power point tracking for a photovoltaic system under partial and complex shading conditions. *Energy*, 283, 129169. <https://doi.org/10.1016/j.energy.2023.129169>
5. Khan, A. M., Jan, M. A., Sagheer, M., Khanum, R. A., Uddin, M. I., Ahmad, S., & Huda, S. (2023). Near Feasibility Driven Adaptive Penalty Functions Embedded MOEA/D. *IEEE Access*. <https://ieeexplore.ieee.org/document/10256221>
6. Azad, M. A., Sajid, I., Lu, S. D., Sarwar, A., Tariq, M., Ahmad, S., ... & Mahmoud, H. A. (2023). Energy Valley Optimizer (EVO) for Tracking the Global Maximum Power Point in a Solar PV System under Shading. *Processes*, 11(10), 2986. <https://doi.org/10.3390/pr11102986>
7. Rehman, K. U., Sajid, I., Lu, S. D., Ahmad, S., Liu, H. D., Bakhsh, F. I., ... & Lin, C. H. (2023). Fast Tracking of Maximum Power in a Shaded Photovoltaic System Using Ali Baba and the Forty Thieves (AFT) Algorithm. *Processes*, 11(10), 2946. <https://doi.org/10.3390/pr11102946>
8. Butt TJ, Amjad M, Raza SF, Riaz F, Ahmad S, Abdollahian M. Gas Leakage Identification and Prevention by Pressure Profiling for Sustainable Supply of Natural Gas. *Sustainability*. 2023; 15(18):13604. <https://doi.org/10.3390/su151813604>
9. Sajid, I., Gautam, A., Sarwar, A., Tariq, M., Liu, H. D., Ahmad, S., ... & Sayed, A. E. (2023). Optimizing Photovoltaic Power Production in Partial Shading Conditions Using Dandelion Optimizer (DO)-Based MPPT Method. *Processes*, 11(8), 2493. <https://doi.org/10.3390/pr11082493>
10. Azad, M. A., Tariq, M., Sarwar, A., Sajid, I., Ahmad, S., Bakhsh, F. I., & Sayed, A. E. (2023). A Particle Swarm Optimization-Adaptive Weighted Delay Velocity-Based Fast-Converging Maximum Power Point Tracking Algorithm for Solar PV Generation System. *Sustainability*, 15(21), 15335. <https://doi.org/10.3390/su152115335>
11. Ahsan, M., Ahmad, S., Sarwar, A., Tariq, M., Bakhsh, F. I., Mohamed, A. S. N., & Ahmed, H. (2023). Broyden's method assisted differential evolution (BMADE) based selective harmonic elimination in a cascaded H-bridge multilevel inverter. *IET Power Electronics*. <https://doi.org/10.1049/pel2.12553>
12. Altaf S, Asad R, Ahmad S, Ahmed I, Abdollahian M, Zaindin M. A Hybrid Framework of Deep Learning Techniques to Predict Online Performance of Learners during COVID-19 Pandemic. *Sustainability*. 2023; 15(15):11731. <https://doi.org/10.3390/su151511731>
13. Khan, M. A., Khan, M. S., Khan, I., Ahmad, S., & Huda, S. (2023). Non Functional Requirements Identification and Classification Using Transfer Learning Model. *IEEE Access*. <https://ieeexplore.ieee.org/document/10181313>
14. Rizwan, M., Gao, C., Yan, X., Ahmad, S., & Zaindin, M. (2023). An approach to disparage the blindness of backup protection in grid connected renewable energy sources system by inducing artificial fault current. *International Journal of Electrical Power & Energy Systems*, 153, 109185. <https://doi.org/10.1016/j.ijepes.2023.109185>
15. Khaliq, F., Shabir, M., Khan, I., Ahmad, S., Usman, M., Zubair, M., & Huda, S. (2023). Pashto Handwritten Invariant Character Trajectory Prediction Using a Customized Deep Learning Technique. *Sensors*, 23(13), 6060. <https://doi.org/10.3390/s23136060>
16. Mehmood, I., Shahid, S., Hussain, H., Khan, I., Ahmad, S., Rahman, S., ... & Huda, S. (2023). A Novel Approach to Improve Software Defect Prediction Accuracy Using Machine Learning. *IEEE Access*. <https://ieeexplore.ieee.org/document/10155117>
17. Rehman, H., Sajid, I., Sarwar, A., Tariq, M., Bakhsh, F. I., Ahmad, S., ... & Aziz, A. (2023). Driving training-based optimization (DTBO) for global maximum power point tracking for a photovoltaic system under partial shading condition. *IET Renewable Power Generation*. <https://doi.org/10.1049/rpg2.12768>

18. Mustafa, S., Sarwar, A., Tariq, M., Ahmad, S., & Mahmoud, H. A. (2023). Development and Control of a Switched Capacitor Multilevel Inverter. *Energies*, 16(11), 4269. <https://doi.org/10.3390/en16114269>
19. Bashir, Z., Amjad, M., Raza, S. F., Ahmad, S., Abdollahian, M., & Farooq, M. (2023). Investigating the Impact of Shifting the Brick Kiln Industry from Conventional to Zigzag Technology for a Sustainable Environment. *Sustainability*, 15(10), 8291. <https://doi.org/10.3390/su15108291>
20. Sajid, I., Sarwar, A., Tariq, M., Bakhsh, F. I., Hussan, M. R., Ahmad, S., ... & Ahmad, A. (2023). Runge Kutta optimization-based selective harmonic elimination in an H-bridge multilevel inverter. *IET Power Electronics*. <https://doi.org/10.1049/pe2.12507>
21. Asad, R., Altaf, S., Ahmad, S., Mahmoud, H., Huda, S., & Iqbal, S. (2023). Machine Learning-Based Hybrid Ensemble Model Achieving Precision Education for Online Education Amid the Lockdown Period of COVID-19 Pandemic in Pakistan. *Sustainability*, 15(6), 5431. <https://doi.org/10.3390/su15065431>
22. Ullah, A., Mohmand, M. I., Hussain, H., Johar, S., Khan, I., Ahmad, S., ... & Huda, S. (2023). Customer Analysis Using Machine Learning-Based Classification Algorithms for Effective Segmentation Using Recency, Frequency, Monetary, and Time. *Sensors*, 23(6), 3180. <https://doi.org/10.3390/s23063180>
23. Marimuthu, M., Rajendran, S., Radhakrishnan, R., Rengarajan, K., Khurram, S., Ahmad, S., ... & Shafiq, M. (2023). Implementation of VLSI on Signal Processing-Based Digital Architecture Using AES Algorithm. *Computers, Materials & Continua*, 74(3). <https://www.techscience.com/cmc/v74n3/50898>
24. Raza, S. F., Amjad, M., Ishfaq, K., Ahmad, S., & Abdollahian, M. (2023). Effect of Three-Dimensional (3D) Scanning Factors on Minimizing the Scanning Errors Using a White LED Light 3D Scanner. *applied Sciences*, 13(5), 3303. <https://doi.org/10.3390/app13053303>
25. Asad, R., Altaf, S., Ahmad, S., Shah Noor Mohamed, A., Huda, S., & Iqbal, S. (2023). Achieving Personalized Precision Education Using the Catboost Model during the COVID-19 Lockdown Period in Pakistan. *Sustainability*, 15(3), 2714. <https://doi.org/10.3390/su15032714>
26. Naseer, S., Saleem, R., Ghafoor, M. M., Khurram, S., Ahmad, S., Sayed, A. E., & Choi, J. G. (2023). Temporal Preferences-Based Utility Control for Smart Homes. *Intelligent Automation & Soft Computing*, 36(2). <https://doi.org/10.32604/iasc.2023.034032>
27. Altaf, S., Haroon, M., Ahmad, S., Nasr, E. A., Zaindin, M., Huda, S., & Rehman, Z. U. (2023). Radio-Frequency-Identification-Based 3D Human Pose Estimation Using Knowledge-Level Technique. *Electronics*, 12(2), 374. <https://doi.org/10.3390/electronics12020374>
28. Ali, F., Sarwar, A., Bakhsh, F. I., Ahmad, S., Shah, A. A., & Ahmed, H. (2023). Parameter extraction of photovoltaic models using atomic orbital search algorithm on a decent basis for novel accurate RMSE calculation. *Energy Conversion and Management*, 277, 116613. <https://doi.org/10.1016/j.enconman.2022.116613>
29. Atif M, Lilge I, Hanif A, Ahmad S, Devanesan S. Photoacoustic imaging a PDT response marker for monitoring vasculature changes. *Journal of King Saud University-Science*. 2022 Dec 6:102480. <https://doi.org/10.1016/j.jksus.2022.102480>
30. Zaman-ul-Haq M, Kanwal A, Gardezi AA, Fatima H, Saqib Z, Bokhari SA, Nasr EA, Ahmad S, Shafiq M. Assessing Spatial-Temporal Changes in Monetary Values of Urban Ecosystem Services through Remotely Sensed Data. *Sustainability*. 2022 Nov 15;14(22):15136. <https://doi.org/10.3390/su142215136>
31. Ahmad S, Rehman ZU, Altaf S, Zaindin M, Huda S, Haroon M, Iqbal S. Dynamic Key Extraction Technique Using Pulse Signal and Lightweight Cryptographic Authentication Scheme for WBAN. *Sustainability*. 2022 Nov 7;14(21):14625. <https://doi.org/10.3390/su142114625>
32. Haroon M, Altaf S, Ahmad S, Zaindin M, Huda S, Iqbal S. "Hand Gesture Recognition with Symmetric Pattern under Diverse Illuminated Conditions Using Artificial Neural Network". *Symmetry*. 2022 Sep 30;14(10):2045. <https://doi.org/10.3390/sym14102045>
33. S. Benkirane, A. Guezaz, M. Azrou, A. A. Gardezi, S. Ahmad et al., "Adapted speed system in a road bend situation in vanet environment," *Computers, Materials & Continua*, vol. 74, no.2, pp. 3781–3794, 2023. <https://doi.org/10.32604/cmc.2023.033119>
34. M. I. Satti, J. Ahmed, H. S. M. Muslim, A. A. Gardezi, S. Ahmad et al., "Ontology-based news linking for semantic temporal queries," *Computers, Materials & Continua*, vol. 74, no.2, pp. 3913–3929, 2023. <https://doi.org/10.32604/cmc.2023.033001>
35. S. H. Kumhar, S. I. Ansarullah, A. A. Gardezi, S. Ahmad, A. E. Sayed et al., "Translation of english language into urdu language using lstm model," *Computers, Materials & Continua*, vol. 74, no.2, pp. 3899–3912, 2023. <https://doi.org/10.32604/cmc.2023.032290>
36. M. Khan, I. Ali, S. Khurram, S. Naseer, S. Ahmad et al., "Etl maturity model for data warehouse systems: a cmmi compliant framework," *Computers, Materials & Continua*, vol. 74, no.2, pp. 3849–3863, 2023. <https://doi.org/10.32604/cmc.2023.027387>
37. Ahmad S. Electromagnetic Field Optimization Based Selective Harmonic Elimination in a Cascaded Symmetric H-Bridge Inverter. *Energies*. 2022 Oct 18;15(20):7682. <https://doi.org/10.3390/en15207682>

38. Haroon M, Altaf S, Ahmad S, Zaindin M, Huda S, Iqbal S. Hand Gesture Recognition with Symmetric Pattern under Diverse Illuminated Conditions Using Artificial Neural Network. *Symmetry*. 2022; 14(10):2045. <https://doi.org/10.3390/sym14102045>, ISSN: 2073-8994, IF: 2.940
39. Altaf S, Ahmad S, Zaindin M, Huda S, Iqbal S, Soomro MW. Multiple Industrial Induction Motors Fault Diagnosis Model within Powerline System Based on Wireless Sensor Network. *Sustainability*. 2022; 14(16):10079. <https://doi.org/10.3390/su141610079>, ISSN: 2071-1050 IF: 3.889
40. Ahmad S, Ahmad F, Alam I, Sayed AE, Abdollahian M. Modeling and Optimizing the System Reliability Using Bounded Geometric Programming Approach. *Mathematics*. 2022; 10(14):2435. <https://doi.org/10.3390/math10142435>, ISSN: 2227-7390, IF: 2.592
41. Al Firdausi, M., & Ahmad, S. (2022). Concise convolutional neural network model for fault detection. *Communications in Science and Technology*, 7(1), 62-72. <https://doi.org/10.21924/cst.7.1.2022.746>
42. Zia ur Rehman, Saud Altaf, Shafiq Ahmad, Mejdal Alqahtani, Shamsul Huda, Sofia Iqbal (2022). Advance Authentication Scheme with Bio-Key Using Artificial Neural Network, *Sustainability* 2022, 14(7), 3950; <https://doi.org/10.3390/su14073950> . ISSN 2071-1050, IF : 3.251.
43. Hussain, N., Khan, M. A., Tariq, U., Kadry, S., Yar, M. A. E., Mostafa, A. M., ... & Ahmad, S. (2022). Multiclass Cucumber Leaf Diseases Recognition Using Best Feature Selection. *Comput. Mater. Contin.*, 70 3281-3294. ISSN:1546-2218, IF :4.890. <https://www.techscience.com/cmc/v70n2/44626>
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RESEARCH INTERESTS

Key research areas are:

- Industrial Internet of Things (IIOT) and smart systems
- Big data analytics using advance statistical and machine learning techniques
- Material characterization and classification techniques
- OR & SCM process modelling & optimization.

RESEARCH PROFILE LINKS

- Google Scholar: [Shafiq Ahmad - Google Scholar](#)
- Scopus: [Ahmad, Shafiq - Author details - Scopus Preview](#)
- ORCID ID: <https://orcid.org/0000-0003-0712-9133>
- WOS: [Ahmad, Shafiq - Web of Science Core Collection](#)

PROFESSIONAL EXPERIENCE

Institution: Australian Government: Department of Families, Housing, Community Services and Indigenous Affairs, Canberra, AUSTRALIA

Position title: Senior Policy Analyst & Researcher

July 2010 to July 2011

Job Description: I have completed a number of data analyses, policy research and analytical research projects. Key functions included analysis of surveyed data from various governmental sources to explore main trends affecting Indigenous Australians mobility. This project was a part of Baseline Mapping and Remote Service Delivery (RSD) initiative of Australian Government. Other functions included analysis and development of performance indicators, provide advice and collate information funded by the department and conducted by various agencies like Centre for Aboriginal Economic Policy Research (CAEPR), provide quantitative analysis and modeling to explore new policy formulation and the monitoring of existing policy initiatives.

Organization: Automation Department, Seagate Technology Limited, Bangkok, THAILAND
Position title: Engineering Manager
Jul 2000 – Jan 2006

Job Responsibilities: Key responsibilities fall in the area of project planning and management, budget planning, continuous process improvement, supply chain management, maintenance planning, vendor liaison and management and system analysis and design consultations. I've managed development projects with capital budgets ranging from 500K-4M USD from conception through to installation. Also led several Transfers of Technology (TOT) projects between design & development centers in USA and manufacturing sites in Asia.

Organization: Airbus (DASA) Kreetslag 10, 21129 Hamburg, GERMANY
Position title: Research Associate *Aug 1999 – Mar 20001*
Job Responsibilities: I have conducted a research project covering analysis, optimization and validation of a simulation model for Airbus A340 aircraft PACK air-conditioning system. The research aim was to conduct mathematical analysis of the existing simulation model by interfacing subroutines for environmental parameters like temperature, pressure, enthalpy, and humidity and compare simulation results with the real time flight data. Improved model was finally integrated and successfully tested with ADS3000 (real time climate simulation and monitoring system) for the validation and implementation purposes.

Organization: Heavy Industries Taxila, HIT Taxila, Armoured Vehicle division, Pakistan
Position title: Assistant Works Manager (AWM) *Jul 1994 – April 1998*
Job Responsibilities: For a period of four years, I served as AWM manufacturing as well as AWM Maintenance & Facility Support departments and directly report to GM production. My duties covered business process re-engineering through productivity, process and design improvement initiatives. I also led technology transfer projects covering multiples heavy machinery manufacturing lines (armoured personal carriers) from NORINCO, China.

Organization: Ibrahim Textile Mills, ITML, Faisalabad, Pakistan
Position title: Maintenance Engineer *Jul 1992 – Jul 1994*
Job Responsibilities: Key functions were to coordinate with KPMG staff for development and implementation of computerized Planned Plant Maintenance (PPM) system at spinning unit (capacity 50,000 spindles), thus supporting the overall ERP system setup at the operational site.

INDUSTRIAL CONSULTANCY

- Conducted 6 weeks (Feb – Mar 2006) Six Sigma (DMAIC) Operational training for Al-Rahmat Textile's management (10 managers, 2 senior managers and 2 directors), Faisalabad Pakistan. Training was organized in such a manner that it has achieved its objective to give hands on experience to trainees to utilize Six Sigma knowledge for solving real problems related to dying process yield and optimization of the existing chemical process.
- Conducted 2 days (21-22 November 2005) Six Sigma Green belt training "a compact Six Sigma methodology overview" to all engineers and managers of Al-Rahmat Textile Mills, Faisalabad Pakistan.
- Conducted a 2 Days National Workshop on Six Sigma organized by National Productivity Organization (NPO); a chapter of Asian Productivity Organization (APO) Tokyo, Japan, in collaboration with Executive Development Centre of GIFT University Business School, Gujranwala, Pakistan, (17-18 November 2005)
- Conducted 2 days training workshop on Reliability Centered Maintenance (RCM) methodology organized by Seagate Technology Maintenance department at Seagate, Bangkok, Thailand, (19-20 October 2005) for all maintenance engineers (40 engineers participated in that training).

COMPUTER SKILLS & PROFESSIONAL TRAININGS

- Proficient PC skills, e.g. MS Office, MS Project, MATLAB, MINITAB, SPSS softwares.
- DFSS Project base training organized by Seagate in consultation with Berryman & Associates, L.P. USA.
- Reliability for Engineers organized by Seagate Technology in consultation with NUS Singapore.
- Occupational Health and Safety OHSAS 18001 training organized by Seagate Technology Thailand
- Lean Manufacturing Concept & Tools for Engineer organized by Seagate, Thailand.
- Implementation of Equipment Safety Standards organized by Seagate corporate USA.
- Ergonomics for volume manufacturing equipment conducted by Moduspec Risk Management, Malaysia.
- ISO 9000 organized by Pakistan Institute of Quality Control, Lahore, Pakistan
- Kaizen - 7 Tools for continuous improvement organized by Pakistan Institute of Management.

REFERENCES

References are available upon request.